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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,315

09/22/2005

Zamir Tribelsky

P-7664-US

9214

49443 7590 08/18/2008
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EXAMINER

YOO, REGINA M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,315	Applicant(s) TRIBELSKY, ZAMIR	
	Examiner REGINA YOO	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on 6/11/2008 has been received and claims 1, 4 and 16-18 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/11/2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 4, 16-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

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had possession of the claimed invention. Specifically, there is no written description that the stream of liquid to be disinfected includes "contaminant that are not transparent to said UV-radiation" nor is there any disclosure within the Specification that the UV-radiation is not converted into "heat or sonic or ultrasonic pulses at a distal end of said stream of liquid".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4 and 16-118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (3503804).

As to Claim 1, Schneider ('804) discloses a method for photochemical treatment, the method comprising:

providing a stream of liquid (2) (see entire document, particularly Figures 1-3 and 5);

directing UV-radiation (see Col. 2, lines 31-32) within said stream of liquid to disinfect the liquid such that the liquid serves as a flowing liquid wave guide using total internal reflection of the UV radiation (see entire document, particularly Col. 2, lines 22-28, 61-67 and Col. 3, lines 19-27 wherein the use of UV radiation within a stream of liquid inherently disinfects the liquid that is used to carry the UV radiation and thus, the stream of liquid will be a stream of liquid to be disinfected through its interaction with the UV radiation), wherein said UV-radiation is not converted into heat at a distal end of said stream of liquid (see Figure 1 and Col. 2 lines 46-49, which points out that only when particles (8) are added to the liquid stream that the UV-radiation is converted to heat; thus, when the particles are not added to the liquid stream as shown in the embodiment in Figure 1, as well as in Figures 2-3 and 5, the UV radiation is not converted to heat at the distal end of the liquid stream).

While Schneider ('804) does not appear to specifically teach that the stream of liquid provided is to be disinfected where the liquid includes contaminants that are not transparent to the UV-radiation, it was well known in the art at the time of invention to provide a stream of liquid to be disinfected through a pipe with an outlet. It was also known to disinfect the stream at its outlet with UV radiation. It would have been obvious to one of ordinary skill in this art at the time of invention to provide a stream of liquid that is utilized as a liquid to be disinfected, which intrinsically contains contaminants that are not transparent to UV-radiation, in the method of Schneider in order to sterilize the

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stream of water so as to avoid contamination of the surface of object treated by the water.

Moreover, it was well known in the art at the time of invention that to produce sonic or ultrasonic pulses at a distal end of a liquid stream, the radiation energy is provided in pulses/intermittently within the liquid stream (see Schneider Col. 1 line 68 to Col. 14 and Col. 2 lines 38-40). Thus, it would have been well within the purview of one of ordinary skill in the art to provide UV-radiation as a pure radiation energy at a distal end of said stream of liquid by providing the radiation energy continuously rather than in pulses/intermittently (so that the UV-radiation is not converted to sonic or ultrasonic pulses at a distal end of the liquid stream) in order to only provide a disinfection function for the liquid and/or surface being exposed to the UV-radiation. Only the expected results would be attained.

As to Claim 4, Schneider ('804) discloses a method for photochemical treatment wherein said UV-radiation is generated by a laser source ((see entire document, particularly Col. 2, lines 59-60 and Col. 3, lines 69-71).

As to Claim 16, Schneider ('804) discloses a method for photochemical treatment wherein said liquid having a refractive index greater than a refractive index of the surrounding (see entire document, particularly Col. 2, lines 61-67 and Col. 3, lines 19-23 wherein the occurrence of total internal reflection within the liquid of the radiation indicates that the liquid possesses a higher refractive index than the surrounding).

As to Claim 17, Schneider ('804) discloses a method for photochemical treatment wherein the UV radiation is utilized, but does not appear to specifically teach that UV radiation is UVA-, UVB- or UVC-radiation. However, UV radiation inherently consists of UV-A, UV-B or UVC-radiation, and thus is deemed to meet this limitation.

As to Claim 18, Schneider ('804) discloses a method for photochemical treatment wherein the liquid being water (see entire document, particularly Col. 3, line 24 and Col. 4, line 26).

7. Claims 1, 4 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (3503804) in view of Norton (4676896) or Baca (20020079271).

As to Claim 1, Schneider ('804) discloses a method for photochemical treatment, the method comprising:

providing a stream of liquid (2) (see entire document, particularly Figures 1-3 and 5);

directing UV-radiation (see Col. 2, lines 31-32) within said stream of liquid to disinfect the liquid such that the liquid serves as a flowing liquid wave guide using total internal reflection of the UV radiation (see entire document, particularly Col. 2, lines 22-28, 61-67 and Col. 3, lines 19-27 wherein the use of UV radiation within a stream of liquid inherently disinfects the liquid that is used to carry the UV radiation and thus, the

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stream of liquid will be a stream of liquid to be disinfected through its interaction with the UV radiation), wherein said UV-radiation is not converted into heat at a distal end of said stream of liquid (see Figure 1 and Col. 2 lines 46-49, which points out that only if and when particles are added to the liquid stream that the UV-radiation is converted to heat; thus, when the particles are not added to the liquid stream as shown in the embodiment in Figure 1, as well as in Figures 2-3 and 5, the UV radiation is not converted to heat).

Schneider ('804) does not appear to specifically teach that the stream of liquid provided is to be disinfected nor that the liquid includes contaminants that are not transparent to said UV-radiation, or that the UV-radiation is not converted into sonic or ultrasonic pulses at a distal end of said stream of liquid.

As to the limitations that the stream of liquid is a fluid to be disinfected and that the liquid contains contaminants that are not transparent to the UV-radiation, it was well known in the art at the time of invention to provide a stream of liquid to be disinfected through a pipe with an outlet and to disinfect the stream at its outlet with UV radiation. It would appear that such liquids contain contaminants that are not transparent to UV radiation.

Norton ('896) exemplifies a method of water purification through photochemical treatment (see entire document, particularly Abstract), comprising:

providing to a stream of liquid to be disinfected by UV-radiation, where said liquid includes contaminants that are not transparent to said UV-radiation (see Col. 1 lines 5-57 and Col. 2 lines 3-23; where the contaminants are bacteria within the water); and

directing within said stream of liquid to be disinfected UV radiation to disinfect the liquid (see entire document, particularly Col. 1 lines 47-55 and Col. 2 lines 5-20),

in order to sterilize the water to eliminate bacterial contamination of the water for end use.

Baca ('271) also exemplifies a method of water purification (see entire document, particularly Abstract and Figures 2-3), comprising:

providing a stream of liquid to be disinfected by UV-radiation, where the liquid includes contaminants that are not transparent to said UV-radiation (see p.2-p.3 [0026]-[0027] and p. 4 [0038]; where contaminants being microorganisms); and

directing, within said stream of liquid to be disinfected, UV-radiation to disinfect the liquid (see entire document, particularly p. 2 [0027] and p. 4 [0040]-[0042]),

in order to effectively kill unwanted microorganisms within the water so that the water when used to treat a surface does not contaminate the surface (see p. 4 [0040]).

It would have been obvious to one of ordinary skill in this art at the time of invention to provide the stream of liquid utilized as a liquid to be disinfected in the method of Schneider in order to sterilize the stream of water so as to avoid contamination of the surface of object treated by the water as exemplified by Norton or Baca.

As to the limitation that the UV-radiation is not converted into sonic or ultrasonic pulses at the distal end of the liquid stream, it was well known in the art at the time of invention that to produce sonic or ultrasonic pulses at a distal end of a liquid stream is to

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provide the radiation energy in pulses/intermittently within the liquid stream (see Schneider Col. 1 line 68 to Col. 14 and Col. 2 lines 38-40). Thus, it would have been well within the purview of one of ordinary skill in the art to provide UV-radiation as a pure radiation energy at a distal end of said stream of liquid by providing the radiation energy continuously rather than in pulses/intermittently (so that the UV-radiation is not converted to sonic or ultrasonic pulses at a distal end of the liquid stream) in order to only provide a disinfection function for the liquid and/or surface being exposed to the UV-radiation. Only the expected results would be attained.

As to Claim 4, Schneider ('804) discloses a method for photochemical treatment wherein said UV-radiation is generated by a laser source (see entire document, particularly Col. 2, lines 59-60 and Col. 3, lines 69-71).

Baca ('271) also discloses a method for photochemical treatment wherein said UV-radiation is generated by a laser source (see entire document, particularly Abstract and p. 4 [0041]).

As to Claim 16, Schneider ('804) discloses a method for photochemical treatment wherein said liquid having a refractive index greater than a refractive index of the surrounding (see entire document, particularly Col. 2, lines 61-67 and Col. 3, lines 19-23 wherein the occurrence of total internal reflection within the liquid of the radiation indicates that the liquid possesses a higher refractive index than the surrounding).

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As to Claim 17, while Schneider ('804) and Norton ('896) disclose a method for photochemical treatment wherein the UV radiation is utilized, but neither Schneider nor Norton appears to specifically teach that UV radiation is UVA-, UVB- or UVC-radiation. However, UV radiation inherently consists of UV-A, UV-B or UVC-radiation, and thus is deemed to meet this limitation.

Baca ('271) also discloses a method for photochemical treatment wherein the UV radiation is utilized is UVA-, UVB- or UVC-radiation (see entire document, particularly p. 2 [0027]).

As to Claim 18, Schneider ('804) discloses a method for photochemical treatment wherein the liquid being water (see entire document, particularly Col. 3, line 24 and Col. 4, line 26).

Norton ('896) also discloses that the liquid is water (see Abstract).

Baca ('271) also discloses that the liquid is water (see Abstract).

Thus, Claims 1, 4 and 16-18 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Schneider ('804) and Norton ('896) or Baca ('271).

Response to Arguments

8. Applicant's arguments with respect to claims 1, 4 and 16-18 have been considered but are moot in view of the new ground(s) of rejection.

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9. Applicant's arguments filed 6/11/2008 have been fully considered but they are not persuasive.

Specifically, as to Applicant's argument that "Schneider is direct to a method and apparatus for producing sonic or ultrasonic waves on a surface", Examiner would continue to maintain that the Schneider intrinsically discloses a method of disinfecting a liquid stream in which UV-radiation is provided as stated in rejections above.

As to Applicant's argument that the "liquid jet disclosed by Schneider is a medium used for energy transfer and...[that] liquid jet is formed of clear liquid so as not to constitute any resistance to the radiation energy of the beam", Examiner would point to the new rejections of Claim 1 in view of Schneider and/or Norton or Baca under 35 U.S.C. 103 (a).

As to Applicant's argument regarding the newly added limitation that "the UV-radiation is not converted into heat", Examiner would also point to the rejections stated above, where it is pointed out that Schneider discloses that the radiation energy is only converted into heat with addition of particles and Examiner points out the embodiments in Figures 1-3 and 5 where no particles are added. Moreover, Examiner would point out that Schneider discloses that the "radiation energy can be emitted intermittently, that is, in pulses, so that ...desired pulsating effect is obtained at the point of impingement of the liquid jet", thus Examiner would maintain that it would have been also well within the purview of one of ordinary skill in the art to provide the radiation energy continuously in order to avoid sonic or ultrasonic pulses at the distal end of the liquid stream as

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discussed in the rejections stated above, where only the expected results would be attained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REGINA YOO whose telephone number is (571)272-6690. The examiner can normally be reached on Monday-Friday, 10:00 am - 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RY

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797